



Time Synchronization

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Objective

- Synchronize date & time across multiple NOS and OS platforms
- Ensure minimal user disruption while utilizing the fewest Support Services resources possible
- Ensure the network is Y2K compliant with regard to time synchronization

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Goal

- Implement a process by which all clients and servers on the DOE network automatically display a consistent date and time for 1999 and through the year 2000...

...with ZERO user disruption and minimal support services interaction.

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Our Current Environment

- Networks
 - Novell & NT
- Clients
 - Novell, NT, Win 95, Win 3.x/DOS

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Novell Network

- Win 95, NT and 3.x
- Clients must use Novell IntraNetware Client 32, v.4.15 for NT, v.3.0 for 95
- Use Set Station Time=On (Novell default client variable) to synchronize time with a Novell login server at every login

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NT Network

■ Win 95 Client

– Login Script

- Win 95 clients must use a login script that runs Microsoft's NET TIME command:

NETTIME\\<computername> /SET /Y

- Where <computername> is the name of a server that has accurate time
- Ensure that server replication is functioning properly so that the login script on the PDC is identical to all BDC's

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NT Network

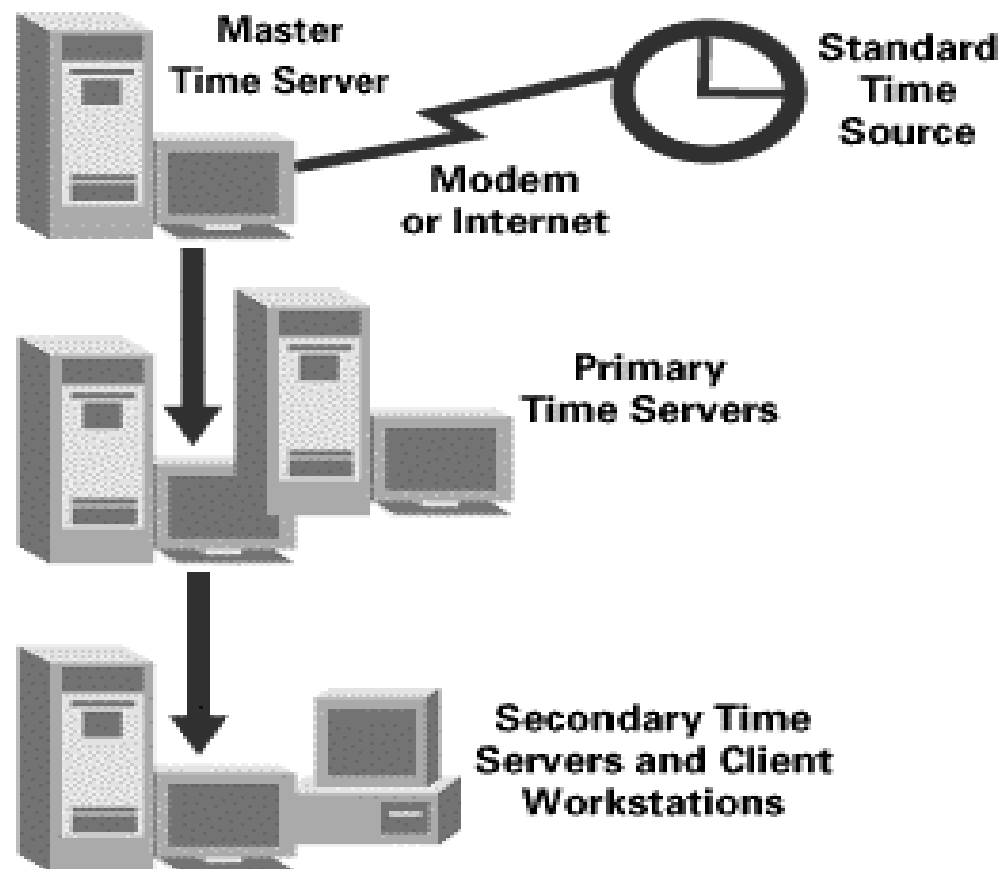
■ Win NT Client

– Timeserv

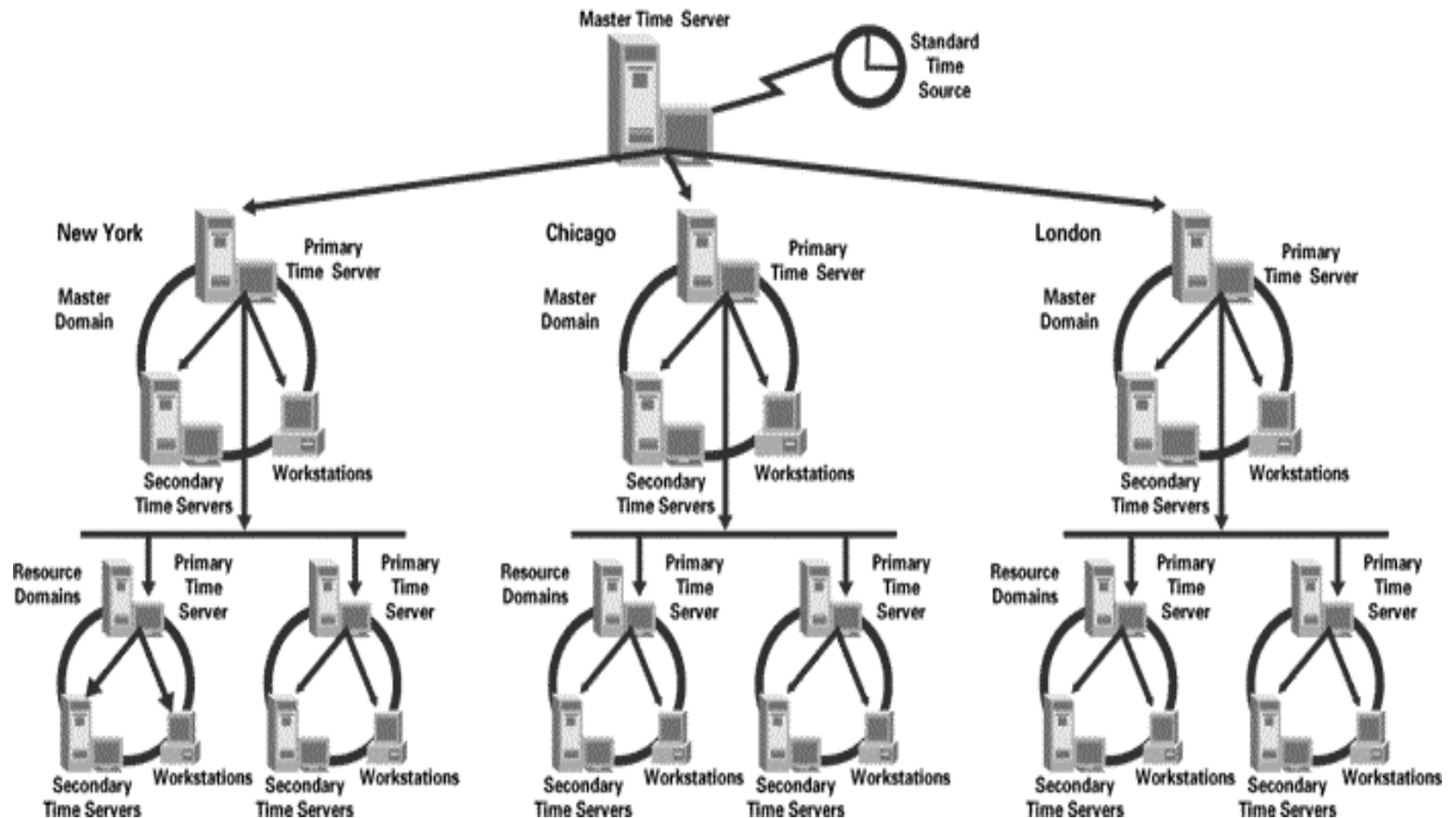
- Included in NT 4.0 Server Resource Kit
- Must be installed & configured as administrator
- Runs in background regardless of login
- Server AND workstation must have service installed
- Consists of TIMESERV.EXE, TIMESERV.INI and TIMESERV.DLL
- Server should obtain time from a reliable external source

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Multitiered Time Synchronization System



Multiple Domain Time Synchronization System



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Configuring Timeserv for NT

- **Standard Time Source**
 - USNO, NIST, etc.
 - Available via simple NTP - IP or modem
- **Master Time Server**
 - NT Server or Workstation that obtains time from Standard Time Source
 - Provides time to rest of network

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Configuring Timeserv for NT

- **Primary Time Server**
 - Obtains time from a specific server on the network
- **Secondary Time Server**
 - Obtains time from a specific NT domain
 - May be domain other than its own

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Configuring Timeserv for NT

- Utilize the TIMESERV.INI to configure:
 - Server Type (master, primary, secondary)
 - Time Source
 - Access method (modem,IP)
 - Update Interval

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A Few Notes

- Timeserv
 - Utilize Event Logging (NTP errors)
 - REM out all unused settings in timeserv.ini
 - Sometimes accessing the NTP timesource may time out, be sure that you can ping and that the hops are not too long...may cause NTP errors

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Reference

- Windows NT Magazine Online
 - *TimeSynchronization in an NT Network*,
Feb 1997, Tao Zhou
<http://www.winntmag.com/magazine/article.cfm?ArticleID=522>
- Windows NT 4.0 Server Resource Kit
 - Contains the .exe, .dll and .ini files necessary to run timeserv

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